



350.org Fossil Free Europe Tour

Live Stream Screening

Dublin City University

Friday, 1st November 2013

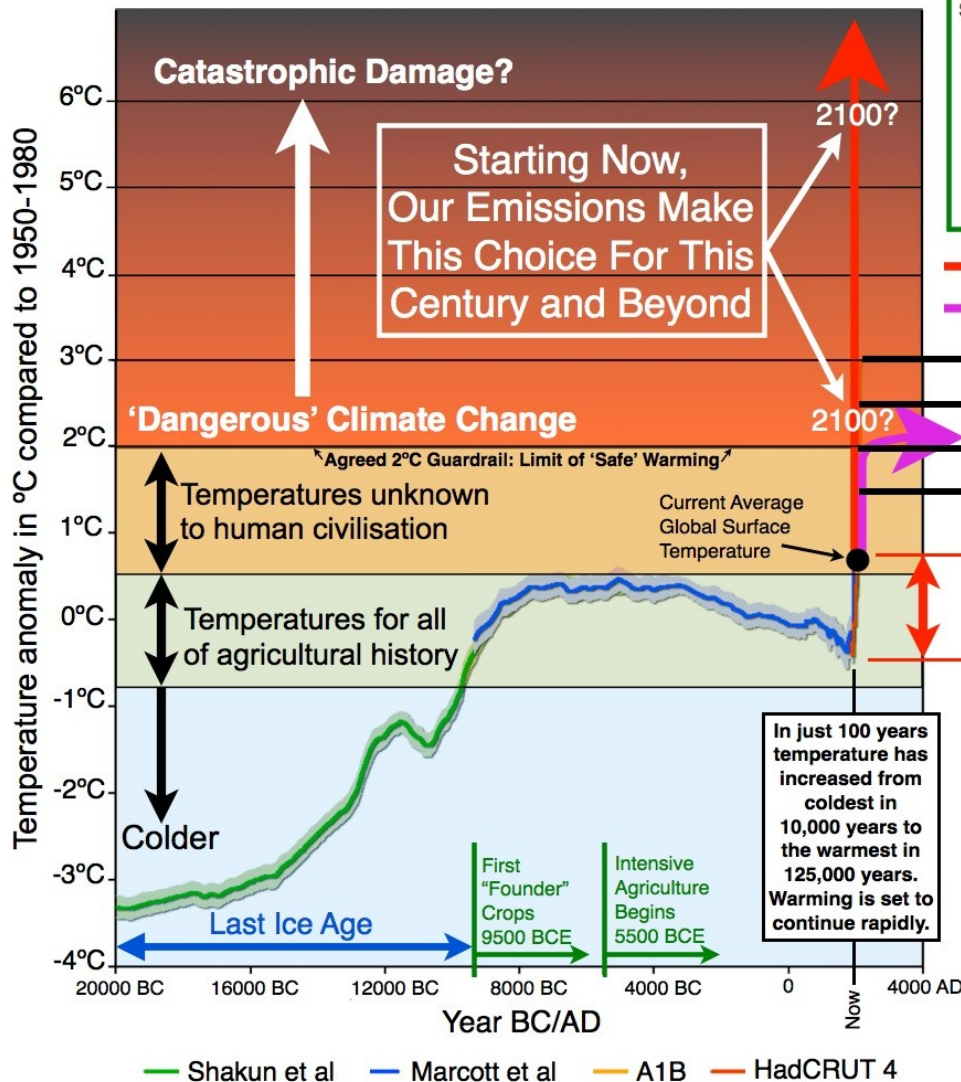


We have far more oil, coal and gas than we can safely burn. For all the millions of words written about climate change, the challenge really comes down to this: fuel is enormously useful, massively valuable and hugely important geopolitically, but tackling global warming means leaving most of it in the ground – by choice.

– Duncan Clark, “Why can't we quit fossil fuels?”
<http://tinyurl.com/brzex9x>

Emissions Choices **Now** Determine Future Climate Damage

Average Earth Surface Temperature Over 22,000 Years



This chart, including the most recent science, shows the Earth's average surface temperature over the past 22,000 years, relative to recent values.

- All of human civilisation and agriculture can be seen to have taken place in a **very** limited 1°C band of temperatures (+ stable CO₂ levels).
- Humanity's burning of fossil fuels has now increased carbon dioxide levels in the atmosphere by 42%. This could reach **300%** by 2100.
- Limiting warming critically depends on **peaking** GHG emissions as soon as possible. **Every year of delay greatly increases future warming.**

— Current emissions forecast gives 6°C of warming } **Humanity's Alternatives**
 — Peak emissions soon, then rapid decarbonisation }

After **2053**: Warming **cannot** be constrained below 3°C

After **2040**: Warming **cannot** be constrained below 2.5°C

After **2027**: Warming **cannot** be constrained below 2°C

After **2012**: Warming **cannot** be constrained below 1.5°C

Dates assume that emissions peak much earlier than the above date, and decline fast after peaking.

Current rate of warming is faster than any change in the last 22,000 years. It is a rate only seen in major geologic extinction events. At this rate, by 2100, 6°C eventual warming plausible given forecast emissions. 251 million years ago, a warming of about 6°C killed 95% of all life.

Essential Facts About the Current Global Warming

- Any and all further greenhouse gas emissions = **More** warming
- Limiting emissions **will** limit warming if emissions **peak** as soon as possible
- Total **cumulative** emissions will determine eventual temperature
- Warming is irreversible, but **level** of warming depends on human actions.

Average global surface temperatures from 20,000 years ago to present and forecast: past reconstructions, compared to pre-industrial, and forecast warming from now on.

Redrawn by [Paul Price](#), after [Jos Hagelaars'](#) combined presentation of temperature anomaly reconstructions by Marcott et al (2012), Shakun et al (2012), observed HadCRUT4 instrumental recent temperature record, and the IPCC A1B projection (currently being tracked by observed emissions). Hagelaars' graphic has been annotated with: temperature bands and markers for human history; the low emissions alternative leading to lower temperature (humanity's choice now); the current emissions track toward potentially catastrophic temperatures by 2100; warming constraint dates above are from Stocker, 2012. See discussion at: www.climie.blogspot.ie
 See also discussion at <http://ourchangingclimate.wordpress.com/2013/03/19/the-two-epochs-of-marcott/?replytocom=18266>